

What is claimed is:

1. A communication semiconductor integrated circuit, comprising:

a DA converter circuit which DA-converts a modulating code;

a voltage-controlled oscillator circuit;

a phase comparator which detects a phase difference between an oscillation output of the voltage-controlled oscillator circuit and a reference clock signal; and

a control voltage generating circuit which generates a voltage corresponding to the phase difference detected by the phase comparator and applies the voltage to the voltage-controlled oscillator circuit as a first control voltage,

said voltage-controlled oscillator circuit being controlled by the first control voltage to thereby generate a frequency signal used as a carrier, and the voltage-controlled oscillator circuit being controlled by a second control voltage based on an output of the DA converter circuit to thereby frequency-modulate the carrier and output the carrier,

wherein a frequency adjustment/control circuit which measures the frequency of the oscillation output of the voltage-controlled oscillator circuit and generates a signal corresponding to the measured value by referring to a pre-set target value is provided, and

wherein a reference current value of the DA converter circuit is changed based on the signal generated by the frequency adjustment/control circuit to thereby correct a frequency of the oscillation output of the voltage-controlled oscillator circuit.

2. A communication semiconductor integrated circuit according to claim 1, wherein the frequency adjustment/control circuit measures the frequency of the oscillation output of the voltage-controlled oscillator circuit according to turning on of a power supply voltage and generates a signal corresponding to the measured value.

3. A communication semiconductor integrated circuit according to claim 1, wherein the frequency adjustment/control circuit measures the frequency of the oscillation output of the voltage-controlled oscillator circuit according to an input of a predetermined command and generates a signal corresponding to the measured value.

4. A communication semiconductor integrated circuit according to claim 1, wherein the frequency adjustment/control circuit includes: a frequency measuring circuit which measures the oscillation output of the voltage-controlled oscillator circuit or a

frequency of a signal obtained by dividing the oscillation output; and an arithmetic circuit which calculates a correction value from the value measured by the frequency measuring circuit and the target value.

5. A communication semiconductor integrated circuit according to claim 4, wherein the DA converter circuit includes: a current value switching circuit which varies the reference current on the basis of the correction value; and a register which holds the correction value.

6. A communication semiconductor integrated circuit according to claim 4, wherein the arithmetic circuit generates a difference between a value measured by the frequency measuring circuit in a state controlled so as to increase the frequency of the oscillation output of the voltage-controlled oscillator circuit in accordance with an output from the DA converter circuit and a value measured by the frequency measuring circuit in a state controlled so as to decrease the frequency of the oscillation output of the voltage-controlled oscillator circuit in accordance with an output from the DA converter circuit, generates a signal corresponding to a ratio of the difference to a target value; and supplies the signal and the difference to the current value switching circuit as a current value control signal.

7. A communication semiconductor integrated circuit according to claim 4, wherein the arithmetic circuit is configured so as to generate a signal corresponding to the difference between the value measured by the frequency measuring circuit and the target value, and correct the frequency of the carrier of the voltage-controlled oscillator circuit in accordance with the signal corresponding to the difference.

8. A communication semiconductor integrated circuit according to claim 4, wherein the voltage-controlled oscillator circuit comprises an LC resonant oscillator, and changes values of capacitances constituting the LC resonant oscillator to thereby vary the oscillation frequency.

9. A communication semiconductor integrated circuit according to claim 8, wherein the voltage-controlled oscillator circuit includes a capacitance value switching circuit comprising a plurality of capacitive elements and switch elements coupled in series with the respective capacitive elements, and selects the turned-on one of the switch elements to thereby vary an oscillation frequency.

10. A communication semiconductor integrated circuit according to claim 1, wherein the voltage-controlled oscillator circuit includes first variable

capacitance function and second variable capacitance function, and is configured such that a capacitance value of the first variable capacitance function is varied by the first control voltage and a capacitance value of the second variable capacitance function is varied by the second control voltage to thereby change oscillation frequencies independently respectively.

11. A communication semiconductor integrated circuit, comprising:

- a DA converter circuit which DA-converts a modulating code;

- a voltage-controlled oscillator circuit;

- a phase comparator which detects a phase difference between an oscillation output of the voltage-controlled oscillator circuit and a reference clock signal; and

- a control voltage generating circuit which generates a voltage corresponding to the phase difference detected by the phase comparator and applies the voltage to the voltage-controlled oscillator circuit as a first control voltage,

- said voltage-controlled oscillator circuit being controlled by the first control voltage to thereby generate a frequency signal used as a carrier, and the voltage-controlled oscillator circuit being controlled by a second control voltage based on an output of the DA converter circuit to thereby frequency-modulate the

carrier and output the carrier,

wherein a frequency adjustment/control circuit which measures the frequency of the oscillation output of the voltage-controlled oscillator circuit and generates a signal corresponding to the measured value by referring to a pre-set target value is provided, and

wherein the characteristic of the DA converter circuit is changed based on the signal generated by the frequency adjustment/control circuit to thereby correct a frequency of the oscillation output of the voltage-controlled oscillator circuit.